



Sharing Experience in Designing and Operating Green Logistics

Pharmaceutical exports from
Australia and Vietnam



A containers journey

- <https://vimeo.com/763934421>



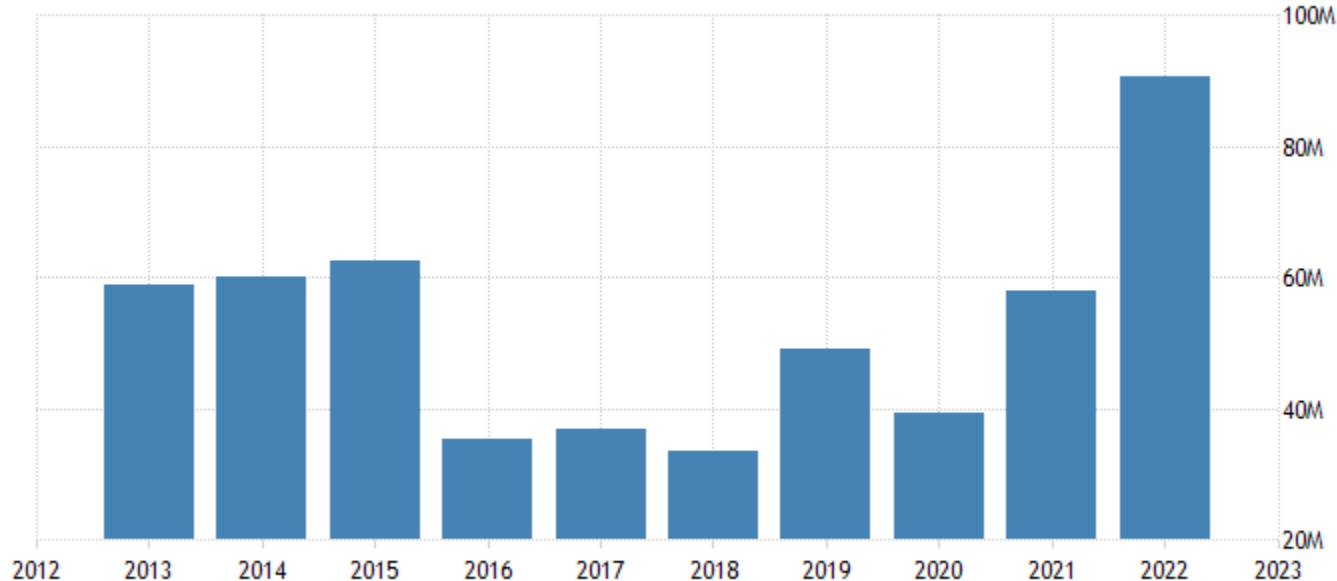
Overview

1. Australian Pharmaceutical exports to Vietnam
2. Green Logistics in Australia
3. Designing a Green supply chain
4. Insights & Recommendations



1. Australian Pharmaceutical exports to Vietnam

- Australia's Exports of pharmaceutical products to Vietnam were US\$90.53 Million in 2022, according to the United Nations COMTRADE database on international trade. This is a significant increase from the preceding year 2021. A significant increase in Vietnamese domestic healthcare spending and initiatives like CPTPP fuels this.
- *Australia's Exports of pharmaceutical products to Vietnam - data, historical chart and statistics - were last updated in November of 2023.*

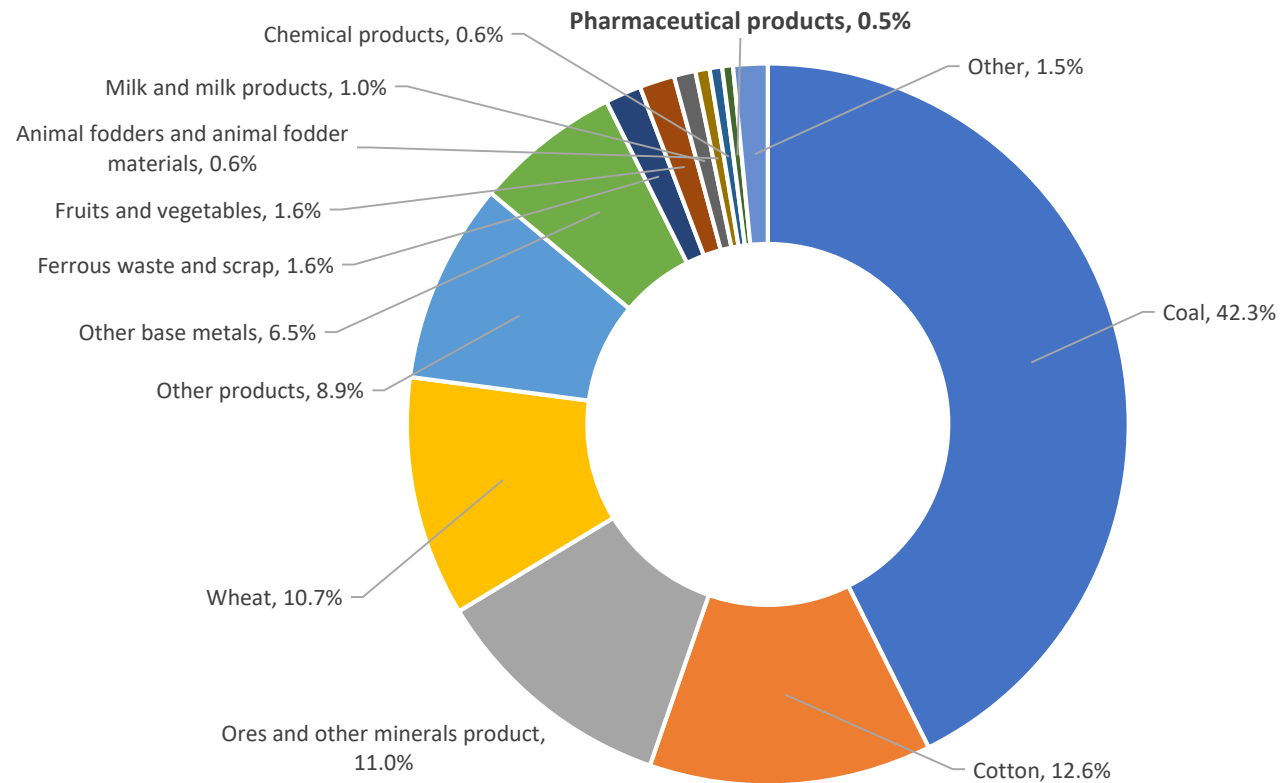


COMTRADE | TRADINGECONOMICS.COM

Source – United Nations COMTRADE platform

1. Australian Pharmaceutical exports to Vietnam

- This is still a small % of the overall Australian export profile to Vietnam

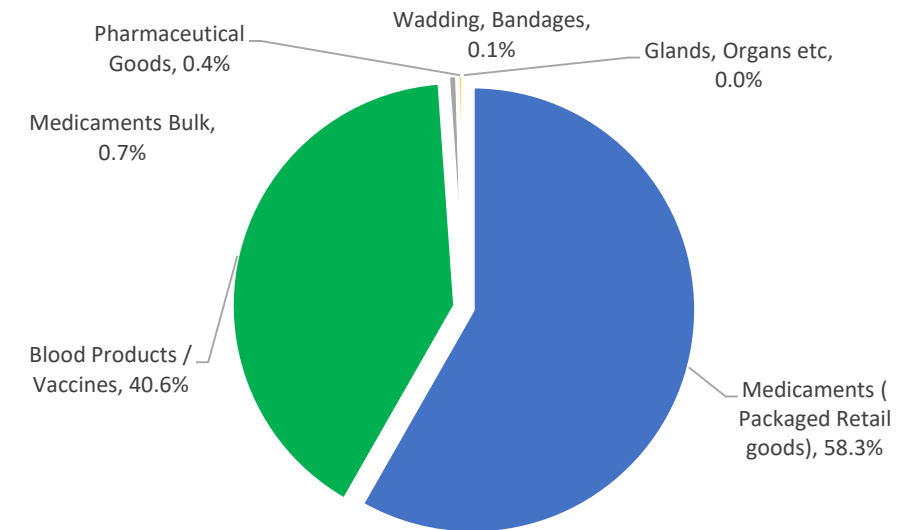


Source – Vietnam General Department of Customs

1. Australian Pharmaceutical exports to Vietnam

- Types of pharmaceuticals being exported and the demand trends in Vietnam.

Australia Exports of pharmaceutical products to Vietnam	Value	Year
Medicaments (Put up in Packings for Retail Sale)	\$52.80M	2022
Human or Animal Blood, Antisera and Other Blood Fractions, Vaccines, Toxins	\$36.82M	2022
Medicaments	\$606.85K	2022
Pharmaceutical Goods	\$342.25K	2022
Wadding, Gauze, Bandages and Similar Articles	\$59.26K	2021
Glands, Other Organs; Extracts of Glands or Other Organs	\$7.49K	2019

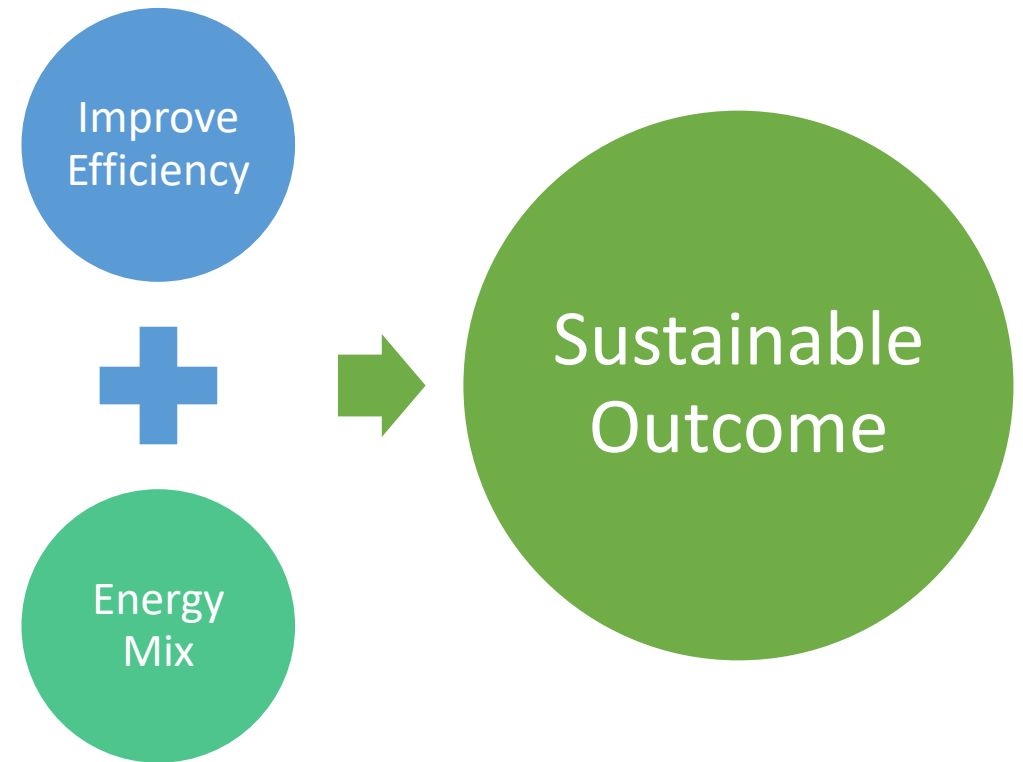


1. Australian Pharmaceutical exports to Vietnam

- Australia's pharmaceutical market is multi-billion-dollar in size, demonstrating steady growth and resilience against global challenges.
- In 2019, Australia's pharmaceutical exports were valued at 3.85 billion USD, indicating a substantial economic contribution.
- Over 85% of Australia's medical products are imported, making it a significant export market for international medical manufacturers.
- Vietnam's pharmaceutical industry is expanding rapidly due to increased healthcare spending by its growing middle class.
- Vietnam's national strategy aims to develop its pharmaceutical industry through 2045, with trade agreements like EVFTA removing barriers and encouraging foreign investment.

2. Green Logistics in Australia

- Green logistics refers to the various actions taken to minimise the environmental impact of the companies in the supply chain, from processing raw materials to delivering the final product to the consumer.
- Energy Mix alone will not solve this.
- Increases in productivity and efficiency will drive better outcome today.



2. Green Logistics in Australia

Improve Efficiency

- Improved Efficiency = Less Resources = Lower cost
- Higher Productivity Vehicles on the road
 - Multi Combinations - more tonnes per km
- Shift to multi-modal – Developing road/rail interfaces
 - Reduce road fleet/congestion
 - Rail Freight = 36g of CO2 per t/km*
 - Road Freight = 96g of CO2 per t/km*
 - Air Freight = 946g of CO2 per t/km*



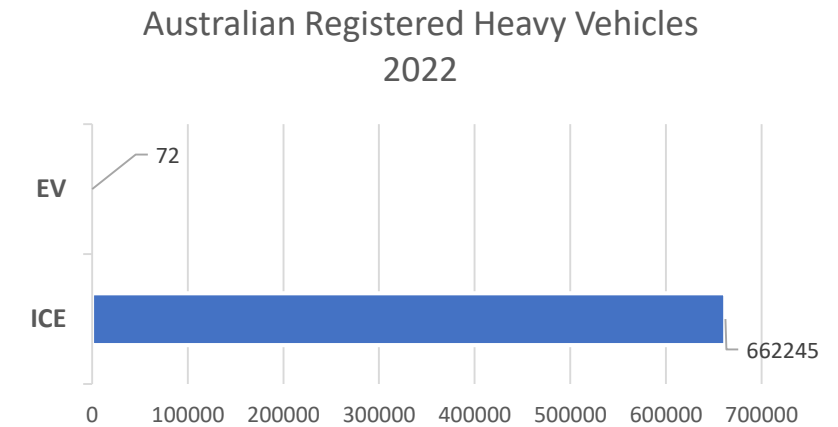
- Automated MHE & warehousing to drive utilisation and save energy
- Invest in technology to improve order routing/inventory planning
- Sustainable packaging
 - Review opportunities to reuse/recycle packaging



2. Green Logistics in Australia - Road



- Zero Emission heavy vehicle technology is still in its infancy.
 - Not yet commercially comparable to Internal Combustion Engines
 - Limited manufacturers of heavy vehicles
 - High capital cost of entry
 - Charging infrastructure limited
 - Hydrogen storage and fuel locations very limited
 - Limited endurance
 - Lower payload – Battery is heavier than diesel
 - Reliability untested in large-scale fleet operations in Australia
 - Total Cost of Ownership still unknown
- Many large corporates in Australia have trials underway
 - Mostly small to medium trucks
 - Larger trucks trialling ‘swap and go’ battery technology
 - Federal and local Government funding/incentives to drive stronger engagement
 - Transition solutions coming to market – ICE to EV conversions



2. Green Logistics in Australia - Road

- Overcoming the Challenges
- **Federal Government providing AU\$146mil over five years for**
 - **Live Trials of green technology**
 - Help commercialise new technology
 - Test its reliability
 - Build test cases to demonstrate total cost of ownership of new green technology
 - **New energy infrastructure**
 - New High current DC Charging stations
 - Hydrogen storage and fuel locations being established through Private / Public partnerships - BOC
 - Engineering new solutions
 - New Swap and Go Technology save charge time



Swappable Battery



2. Green Logistics in Australia - Port

Energy Mix

- Automated systems – Landside Operations
 - Automated Straddle Carriers / Auto Stacking Crane Technology
 - Enables smaller terminal footprint
 - Run lower illumination at night – saving power
 - Drives higher R&D productivity – Less truck queuing / idle time
- Electric Cranes
 - Quay cranes running on electric power.
 - Regenerates power when containers descend.
- Cold Power for ships whilst in dock
 - Ships are to hook to shore power whilst in dock so no generators running on board saving
- Cleaner fuel in ships
 - 01 Jan 2020 Australia introduced limits to the sulphur content in ships fuel.
 - This promotes the use of cleaner exhaust gas



3. Designing a green supply chain

- Designing a green supply chain for pharmaceuticals is a complex but vital task, especially considering the unique requirements of these products. Here's a brief overview you could consider for your presentation:
- **Understanding Pharmaceutical Needs:**
 - Pharmaceuticals have specific storage needs, like temperature control, to maintain their efficacy.
 - They often have a short shelf-life, requiring efficient turnover and reduced waste.
 - Safety and compliance with health regulations are paramount.
- **Green Supply Chain Principles:**
 - Minimize waste by optimizing packaging and using recyclable materials.
 - Ensure energy-efficient transportation, possibly using electric or hybrid vehicles.
 - Implement a take-back or recycling program for unused or expired products.
- **Collaboration with Stakeholders:**
 - Work with suppliers to source sustainable raw materials.
 - Engage with logistics partners to optimize routes for fuel efficiency.
 - Collaborate with healthcare providers to understand demand and reduce overstocking.



3. Designing a green supply chain

- **Technology and Innovation:**
 - Utilize data analytics for better demand forecasting and inventory management.
 - Invest in cold chain technologies that are energy-efficient.
 - Explore blockchain for traceability and transparency in the supply chain.
- **Regulatory Compliance and Certifications:**
 - Adhere to national and international regulations on pharmaceuticals and environmental standards.
 - Seek certifications for green supply chain operations, like ISO 14001.
- **Training and Development:**
 - Train staff on the importance of sustainability in the supply chain.
 - Encourage a culture of continuous improvement and sustainability practice
- **Monitoring and Reporting:**
 - Regularly monitor the environmental impact of the supply chain operations.
 - Report on sustainability metrics to stakeholders and use this data to drive improvements.



4. Insights and Recommendations

- Insight – Start simple
 - Set Baseline for emissions/resource consumption
 - Set clear targets
 - **Start with efficiency**/productivity gains
 - Review energy alternatives
 - Build the Roadmap for a greener future
- Recommend a review of strategies for Vietnam to adopt similar practices, tailored to local conditions and regulatory frameworks.
- Suggest potential areas for collaboration between Australia and Vietnam to promote green logistics in pharmaceutical exports.



Thank you

- **Craig Luxton**

- Director and Principal Consultant



craig@luxton.com.au

